

LISTING OF THE CLAIMS

This listing of claims, amended as indicated below, replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method of determining a height of a highest point on a wire loop, comprising the steps of:

~~forming a wire loop with a wire bonding process;~~

projecting illumination lighting onto a predetermined portion of the wire loop and determining a location of an approximated highest point on said portion of the wire loop based upon characteristics of light reflected from the said location;

positioning a height gauge device over the location of the approximated highest point on the wire loop;

projecting incident light from the height gauge device for illuminating the approximated highest point;

receiving with the height gauge device reflected light produced from the incident light; and

determining from a characteristic of the reflected light the height of the said highest point relative to a reference surface.

2. (Original) A method according to claim 1, wherein the height gauge device includes a triangulation type sensor.

3. (Original) A method according to claim 1, wherein the height gauge device includes a confocal type sensor.

4. Canceled.

5. (Currently Amended) A method according to claim ~~[[4]]~~ 14, wherein an angle of incidence of the illumination lighting at the location of the approximated highest point is substantially normal to a profile of the wire loop at that location.

6. (Currently Amended) A method according to claim ~~[[4]]~~ 14, including determining the heights of a plurality of points within the said location.

7. (Original) A method according to claim 1, including moving the height gauge device relative to the wire loop for determining the heights of a plurality of points on the wire loop.

8. (Canceled).

9. (Canceled).

10. (Canceled).

11. (Currently Amended) A method for determining the heights of the highest points on a plurality of wire loops, comprising the steps of:

positioning a height gauge device over a wire loop;

projecting incident light from the height gauge device onto the wire loop for illuminating a point on the wire loop;

receiving with the height gauge device reflected light produced from the incident light;

determining from a characteristic of the reflected light the height of the said point relative to a reference surface;

moving the height gauge device relative to the wire loop along a scanning path such that incident light projected from the height gauge device intersects a length of each of a plurality of wire loops;

according to claim 9, wherein the scanning path intersects the length of each the wire loop at a plurality of positions.

12. (Currently Amended) A method according to claim 11, including recording a heights of each points on each the wire loop at each position where the scanning path intersects each the wire loop.

13. (Original) A method according to claim 12, including the step of estimating a height of a point proximate a highest position on a wire loop based upon the heights of

the wire loop recorded at the various positions where the scanning path intersects the wire loop.

14. (Canceled).

15. (Currently Amended) An apparatus for determining a height of a highest point on a wire loop, comprising:

~~a bonding device for forming a wire loop by way of a wire bonding process;~~
an illumination lighting system adapted to project illuminating light onto a predetermined portion of the wire loop and a light receptor adapted to receive light reflected from the said portion, the light receptor being configured to determine a location of an approximated highest point on said portion of the wire loop based upon characteristics of the light reflected from the said location;

a height gauge device positionable over the location of the approximated highest point on the wire loop for projecting incident light to illuminate the point and for receiving reflected light produced from the incident light; and

a processor coupled to the height gauge device for determining from a characteristic of the reflected light the height of the said point relative to a reference surface.

16. (Original) An apparatus according to claim 15, wherein the height gauge device includes a triangulation type sensor.

17. (Original) An apparatus according to claim 15, wherein the height gauge device includes a confocal type sensor.

18. (Canceled).

19. (Currently Amended) An apparatus according to claim ~~15~~8, wherein the illuminating lighting system is arranged ~~configured~~ such that an angle of incidence of the illuminating light projected at the location of the approximated highest point is substantially normal to a profile of the wire loop in that location.

20. (Canceled).

21. (Canceled).

22. (Canceled).

23. (Canceled).

24. (Currently Amended) An apparatus determining the heights of the highest points of a plurality of wire loops, comprising:

a height gauge device positionable over a wire loop for projecting incident light to illuminate a point on a wire loop and for receiving reflected light produced from the incident light;

a processor coupled to the height gauge device for determining from a characteristic of the reflected light the height of the said point relative to a reference surface;

according to claim 22, wherein the a positioning device configured to move the height gauge device relative to the wire loops along a scanning path such that incident light projected from the height gauge intersects a the-length of each the-wire loop at a plurality of positions.

25. (Currently Amended) An apparatus according to claim 24, including a memory device for recording heights of points on the wire loop at each position where the scanning path intersects each the-wire loop.

26. (Currently Amended) An apparatus according to claim 25, including a processing device operative to estimate for estimating a height of a point proximate a highest position on a wire loop based upon the heights of the wire loop recorded at the various positions where the scanning path intersects the wire loop.

27. (Canceled).

28. (Canceled).

29. (Original) An apparatus according to claim 15, wherein the height gauge device is positioned adjacent a wire bonding optics module.

30. (Original) An apparatus according to claim 15, including a laser diode coupled to the height gauge device for projecting incident light onto the point.

31. (Original) An apparatus according to claim 15, including a position sensitive device coupled to the height gauge device for receiving reflected light produced from the incident light.

32. (Original) An apparatus according to claim 16, including a position sensitive device coupled to the height gauge device for receiving reflected light produced from the incident light.